

INTERNATIONAL SEARCH REPORT

Intern: Application No
PCT/JP2005/006553

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04B7/26

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-------------------------------|
| X | WO 99/14885 A (NOKIA MOBILE PHONES LIMITED; PAATELMA, RISTO; BERG, HEIKKI; KAASILA, P) 25 March 1999 (1999-03-25) | 1-14 |
| Y | claims 1,2 | 15-31 |
| Y | EP 1 091 609 A (MITSUBISHI DENKI KABUSHIKI KAISHA) 11 April 2001 (2001-04-11) claim 1 | 15-23 |
| Y | WO 03/096696 A (CASTALDO - ELETTRONICA & TELECOMUNICAZIONI; CASTALDO, CARLO) 20 November 2003 (2003-11-20) claims 1-9 | 24-31 |
| A | US 2004/037251 A1 (SHNEYOUR OFER ET AL) 26 February 2004 (2004-02-26) page 1, paragraph 8-19 - page 2 | 5,6,12, 13,17, 18,30,31 |

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- * & * document member of the same patent family

Date of the actual completion of the international search

16 August 2005

Date of mailing of the international search report

22/08/2005

Name and mailing address of the ISA

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Authorized officer

Bischof, J-L

INTERNATIONAL SEARCH REPORT

Information on patent family members

Internal Application No
PCT/JP2005/006553

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|----|---------------------|--|--|
| WO 9914885 | A | 25-03-1999 | AU 9541098 A BR 9812246 A CA 2302372 A1 CN 1271485 A WO 9914885 A2 | 05-04-1999 18-07-2000 25-03-1999 25-10-2000 25-03-1999 |
| EP 1091609 | A | 11-04-2001 | JP 2000308124 A EP 1091609 A1 US 2001001609 A1 WO 0065858 A1 | 02-11-2000 11-04-2001 24-05-2001 02-11-2000 |
| WO 03096696 | A | 20-11-2003 | IT RM20020256 A1 AU 2003230229 A1 EP 1502438 A1 WO 03096696 A1 | 10-11-2003 11-11-2003 02-02-2005 20-11-2003 |
| US 2004037251 | A1 | 26-02-2004 | NONE | |

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

| | | |
|--|---|---|
| Applicant's or agent's file reference P05259600 | FOR FURTHER ACTION | See item 4 below |
| International application No. PCT/JP2005/006553 | International filing date (<i>day/month/year</i>) 29 March 2005 (29.03.2005) | Priority date (<i>day/month/year</i>) 30 March 2004 (30.03.2004) |
| International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237 | | |
| Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. | | |

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 8 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input checked="" type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

| | |
|---|---|
| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70 | Date of issuance of this report 04 October 2006 (04.10.2006) Authorized officer <div style="text-align: center; font-weight: bold; font-size: 1.2em;">Masashi Honda</div> e-mail: pt08@wipo.int |
|---|---|

PATENT COOPERATION TREATY

| | |
|-------------------|-----|
| REC'D 28 AUG 2005 | |
| WIPO | PCT |

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

| |
|---|
| To: see form PCT/ISA/220 13/10 |
|---|

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2005/006553

International filing date (day/month/year)
29.03.2005

Priority date (day/month/year)
30.03.2004

International Patent Classification (IPC) or both national classification and IPC
H04B7/26

Applicant
MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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Bischof, J-L

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/006553

Box No. 1 Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/006553

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|----------------|
| Novelty (N) | Yes: Claims | |
| | No: Claims | 1,7,8,14 |
| Inventive step (IS) | Yes: Claims | |
| | No: Claims | 2-6,8-13,16-31 |
| Industrial applicability (IA) | Yes: Claims | 1-31 |
| | No: Claims | |

2. Citations and explanations
see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V.

- 1 Reference is made to the following documents:

D1 : WO-A- 99/14885 (NOKIA).

The document D1 is considered as being the closest state of the art.

- 2 **INDEPENDENT CLAIMS 1 AND 7**

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claims 1 and 7 is not new in the sense of Article 33(2) PCT.

Document D1 discloses a radio communication system using TDMA for dividing a time interval into N time slots and performing transmission of signals at each of the time slots (see claims 1 and 2 of D1). The system comprises a master station and slaves stations (a base and mobile stations, see claim 1 of D1). The signal is repeated in M time slots (M greater or equals to 1) and received by the slave stations (see claim 1 of D1) in synchronisation with a control signal (see claim 2 of D1).

The subject-matter of independent system claim 1 and corresponding independent method claim 7 is therefore not new (Article 33 PCT).

- 3 **INDEPENDENT CLAIMS 8 and 14**

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claims 8 and 14 is not new in the sense of Article 33(2) PCT.

Document D1 discloses a radio communication system using TDMA for dividing a time interval into N time slots and performing transmission of signals at each of the time slots (see claims 1 and 2 of D1). The system comprises a first radio communication station and second radio stations (a base and mobile stations, see claim 1 of D1). The signal

is repeated in M time slots (M greater or equals to 1) and received by the second radio station (see claim 1 of D1).

The subject-matter of independent system claim 8 and corresponding independent method claim 14 is therefore not new (Article 33 PCT).

4 INDEPENDENT CLAIM 15

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 15 does not involve an inventive step in the sense of Article 33(3) PCT.

The subject-matter of independent claim 15 differs from D1 by having a system working in a duplex and in a simplex mode. In a duplex mode, two time slots are needed for transmission, a time slot for each direction of communication. In case of a simplex communication, two time slots can be used by the master station for transmission (a second one being not needed by the slave station for response). The master station is using the available time slots for redundancy in information transmission. The problem solved is reliability in transmission by repeatedly transmitting a signal. Document D1 solves the same problem using the same method in a radio mobile system. See claims 1 and 2 of D1.

The subject-matter of independent claim 15 lacks therefore inventive step (Article 33 PCT).

5 INDEPENDENT CLAIM 24

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claim 24 does not involve an inventive step in the sense of Article 33(3) PCT.

The subject-matter of independent claim 24 is the application of the method disclosed in D1 to a door phone system. Information is repeated in time slots to increase reliability in transmission. Document D1 solves the same problem with the same method in a

radio mobile system. See claim 1 and 2 of D1.

The subject-matter of independent claim 24 lacks therefore inventive step (Article 33 PCT)

6 DEPENDENT CLAIMS 2-6, 9-13, 16-23, 25-31

Dependent claims 2-6, 9-13, 16-23, 25-31 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).

Re Item VII.

Independent claims 1, 8, 15, 24 are system claims, independent claims 7, 14 are method claims. There should be only one independent claim per category for clarity reasons (Article 6 PCT) and to avoid non unity objections (Rule 13 PCT).

Re Item VIII.

The application does not meet the requirements of Article 6 PCT, because claims 1 and 7 are not clear.

1.1 Claim 1 states "communication of independent signals" in line 5, "a transmission signals (plural)" in line 9, "divided transmission signals" in line 11, "to receive one divided transmission signals (plural)" in line 27. It is not clear if one or a plurality of signals are transmitted and received. The same remark applies for claim 7.

1.2 The expression "multiple times repeatedly" is not clear. It is not clear if the signal is duplicated in a plurality of time slots or if a signal is repeated in a time slot a plurality of times. The same remark applies for claim 7.

1.3 The expression in lines 26-27 of claim 1 : the slave station performs reception "for transmitting the transmission signal by the master station" is not clear.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/JP2005/006553



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INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/006553

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☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
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INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/006553

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|----------------|
| Novelty (N) | Yes: Claims | |
| | No: Claims | 1,7,8,14 |
| Inventive step (IS) | Yes: Claims | |
| | No: Claims | 2-6,8-13,16-31 |
| Industrial applicability (IA) | Yes: Claims | 1-31 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V.

- 1 Reference is made to the following documents:

D1 : WO-A- 99/14885 (NOKIA).

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The subject-matter of independent system claim 1 and corresponding independent method claim 7 is therefore not new (Article 33 PCT).

- 3 INDEPENDENT CLAIMS 8 and 14

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is repeated in M time slots (M greater or equals to 1) and received by the second radio station (see claim 1 of D1):

The subject-matter of independent system claim 8 and corresponding independent method claim 14 is therefore not new (Article 33 PCT).

4 INDEPENDENT CLAIM 15

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 15 does not involve an inventive step in the sense of Article 33(3) PCT.

The subject-matter of independent claim 15 differs from D1 by having a system working in a duplex and in a simplex mode. In a duplex mode, two time slots are needed for transmission, a time slot for each direction of communication. In case of a simplex communication, two time slots can be used by the master station for transmission (a second one being not needed by the slave station for response). The master station is using the available time slots for redundancy in information transmission. The problem solved is reliability in transmission by repeatedly transmitting a signal. Document D1 solves the same problem using the same method in a radio mobile system. See claims 1 and 2 of D1.

The subject-matter of independent claim 15 lacks therefore inventive step (Article 33 PCT).

5 INDEPENDENT CLAIM 24

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claim 24 does not involve an inventive step in the sense of Article 33(3) PCT.

The subject-matter of independent claim 24 is the application of the method disclosed in D1 to a door phone system. Information is repeated in time slots to increase reliability in transmission. Document D1 solves the same problem with the same method in a

radio mobile system. See claim 1 and 2 of D1.

The subject-matter of independent claim 24 lacks therefore inventive step (Article 33 PCT)

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**WRITTEN OPINION OF THE
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